May 30, 1997

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Air & Hazardous Waste Division

FROM: Martin Bauer, Chief
Air Quality Permitting Bureau

SUBJECT: Issuance of Tier II Operating Permit #777-00122 to
Rock Contractors, Incorporated, Portable Hot-Mix Asphalt Plant

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) (Rules) for issuing Operating Permits.

PROJECT DESCRIPTION

Rock Contractors, Incorporated, operates a portable hot-mix asphalt facility. Rock Contractors, Inc., is requesting a Tier II operating permit be issued to cover the operations of the hot-mix asphalt facility in both attainment and non-attainment areas throughout the state of Idaho. The facility has a maximum rated capacity of 200 tons per hour (T/hr). The Permittee requested that the standard permitting methodology be applied to the application.

SUMMARY OF EVENTS

On September 15, 1995, the Idaho Department of Health and Welfare, Division of Environmental Quality (DEQ) received a Tier II Operating Permit (OP) application for a portable hot-mix asphalt plant for Rock Contractors, Inc. On December 21, 1995, the application was determined administratively complete.

On March 28, 1997, a proposed Tier II OP was issued for public comment. The public comment period was from April 17, 1997, through May 16, 1997. No comments were received.

FEES

The facility is not major as defined in IDAPA 16.01.01.008.14. Therefore, registration and registration fees in accordance with IDAPA 16.01.01.526 are not applicable upon permit issuance.

The facility is subject to Tier II permit application fees as required by IDAPA 16.01.01.470, for the amount of $500.00. The fee will be requested upon permit issuance.

RECOMMENDATION

Based on the review of the OP application and all applicable state and federal rules and regulations concerning the permitting of air pollution sources, the Bureau recommends that Rock Contractors, Inc., be issued a Tier II OP for this portable hot-mix asphalt facility. Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees for the Tier II OP.

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cc: Pat Rayne, AFS
S. West, Boise Regional Office
OP File Manual
Source File
COF

March 28, 1997

MEMORANDUM

TO: Martin Bauer, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

FROM: Darrin Mehr, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section

THROUGH: Susan J. Richards, Air Quality Permits Manager
Air Quality Permitting Bureau

SUBJECT: Technical Analysis for Proposed Tier II Operating Permit #777-00122
Rock Contractors, Inc. (Portable Standard Hot-Mix Asphalt Plant)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) (Rules) for issuing Operating Permits.

PROJECT DESCRIPTION

This project involves the issuance of a Tier II Operating Permit (OP) for the following process units and fugitive emission sources.

Rock Contractors, Inc., operates a portable Hot-Mix Asphalt (HMA) plant. The company desires to operate in both attainment and non-attainment areas within the state of Idaho. The HMA's designed maximum hourly throughput is 200 tons per hour (T/hr). The facility throughput is currently limited to 158 T/hr by its initial performance test, conducted September 1986. The HMA facility is currently located in Boise, Idaho.

Rock Contractors, Inc. currently operates the HMA within the Boise PM_{10} non-attainment area. The HMA plant was issued a PTC on September 4, 1986 (then owned by Nampa Paving and Asphalt). Ambient air quality impact modeling was performed for operation in attainment areas. Potential particulate matter emissions were set by IDAPA process weight limitations, of 27.7 pounds per hour (lb/hr) in the permit.

Per DEQ policy, modeling of the requested emissions was necessary to allow Rock Contractors, Inc. to operate in PM_{10} nonattainment areas. Rock Contractors, Inc. selected the option of obtaining the streamlined (or standard) permit. This method requires the modeling of point source emissions, but does not include those emissions identified as fugitive. Greater operational flexibility is expected with the standard permitting approach.

1. Process Description

The facility is a portable drum mix hot-mix asphalt plant used for the production of asphaltic concrete. The dryer burner is fired on #2 fuel oil. Emissions are controlled by a multi-clone in series with a venturi scrubber.

2. Equipment Listing

This standard permit analysis includes the following equipment as submitted in the application:

2.1.1 Portable Hot-Mix Asphalt Plant

Manufacturer/Model:	AESCO
Type:	Drum-Mix
Throughput Capacity:	200 T/hr
Burner Manufacture/Model:	Genco/AF-40
Burner Fuel Type:	#2 Diesel
Dryer Heat Input:	45 MM Btu/hr

2.1.2 Air Pollution Control Devices

Type:	Multi-Clone (Primary)
Manufacturer:	Not Available
Model:	Not Available
Type:	Wet Scrubber (Secondary)
Manufacturer:	Yanke
Model:	Not Available

2.1.3 HMA Stack Information

Stack Height:	27 ft
Stack Diameter:	3 ft
Exhaust Gas Flow Rate:	20,642 acfm*1
Stack Exhaust Temp:	119°F

*1 "acfm" stand for actual cubic feet per minute. Flow rate was estimated from 1986 source test information and the requested 200 T/hr production capacity.

SUMMARY OF EVENTS

On September 15, 1995, the Idaho Department of Health and Welfare, Division of Environmental Quality (DEQ) received a Permit to Construct (PTC) application. On October 24, 1995, the application was declared complete. On November 21, 1995, the application was transferred to the Operating Permits Section for processing as a Tier II permit application. On December 21, 1995, the Tier II application was declared administratively complete. On March 3, 1997, Rock Contractors, Inc., formally requested standard (or streamlined) permitting methodology be used for the application.

DISCUSSION

1. Area Classification

The HMA facility is a portable source and may operate in both PM_{10} attainment and non-attainment areas throughout the state of Idaho.

2. Emission Estimates

Emission estimates for this HMA facility were calculated using a lotus spreadsheet and emission factors obtained from the Fifth Edition AP-42, Section 11.1. The spreadsheet calculates the potential to emit (PTE) for the following air pollutants: PM (particulate matter), PM_{10} (particulate matter with an aerodynamic diameter of less than or equal to ten (10) microns), NO_x (nitrogen oxides), SO_2 (sulfur dioxide), and CO (carbon monoxide). In calculating the PTE for each pollutant, the spreadsheet solves for the most limiting pollutant which will give the facility a PTE of less than 100 tons per year (T/yr), i.e., 99 T/yr. In addition, allowable operational limits for the facility, which corresponds to the PTE<100 T/yr, are given as part of the spreadsheet output. A copy of the spreadsheet showing all calculations and results is presented as Appendix A of this memo.

In summary, the emission estimates for this facility assume 200 T/hr throughput to a drum-mix HMA plant, one #2 diesel fired dryer, and fugitive dust emissions from specified sources (see spreadsheet page 3).

3. Facility Classification

This facility is not a designated facility, as defined in IDAPA 16.01.01.006.25 (Rules for the Control of Air Pollution in Idaho). This facility is not a major facility as defined in IDAPA 16.01.01.006.54 and as defined in IDAPA 16.01.01.008.14. This facility is an affected facility and is subject to regulation in accordance with 40 CFR Part 60, Subpart I -Standards of Performance for Hot-Mix Asphalt Facilities.

The facility classification is A2, and the Standard Industrial Classification code (SCC) is defined as 2951.

4. Modeling

Modeling of the asphalt plant stack emissions was conducted using EPA approved SCREEN3 computer run model. The maximum 1-hour impact from the dryer stack was calculated to be 11.86 $\mu g/m^3$ using a 1 lb/hr unity emission rate input to the model. The spreadsheet calculates the ambient impact for each air pollutant (PM-10, NO_x, SO_2 and CO) based on the calculated lb/hr emission rate, averaging periods and background concentrations. The spreadsheet solves for the most limiting pollutant in attainment areas and gives appropriate operational limits which protects the applicable National Ambient Air Quality Standard as defined in IDAPA 16.01.01.577. In addition, the spreadsheet also calculates the most limiting pollutant in non-attainment areas and gives operational limits to protect applicable significant contribution requirements as defined in IDAPA 16.01.01.006.89.

All Screen modeling output files are presented as Appendix B of this memo. Spreadsheet impact calculations and results are presented as Appendix A.

Allowable Operations:

Operation in proposed or designated PM_{10} non-attainment areas is limited to 961 T/day and 350,819 T/yr. Operating in attainment or unclassifiable areas is limited to 1,752,000 tons per year (T/yr). No single pollutant gives the facility a PTE of 99 T/yr of controlled emissions.

Allowable operation is limited to 158 T/hr in both attainment and non-attainment areas unless and until a performance test at a higher production rate is performed successfully, according to Tier II operating permit General Provision I. No modification analysis will be required for the increase in allowable hourly production because the permitting analysis accounted for operation at rated capacity.

5. Regulatory Review

The following rules and regulations were reviewed for this permit analysis:

IDAPA 16.01.01.400	Tier II Operating Permits;
IDAPA 16.01.01.402	Application Procedures;
IDAPA 16.01.01.403	Permit Requirements for Tier II Sources;
IDAPA 16.01.01.404	Procedures for Issuing Permits;
IDAPA 16.01.01.404.01(c)	Opportunity for Public Comment;
IDAPA 16.01.01.405	Conditions for Tier II Operating Permits;
IDAPA 16.01.01.406	Obligation to Comply;
IDAPA 16.01.01.577	Ambient Air Quality Standards;
IDAPA 16.01.01.625	Visible Emissions;
IDAPA 16.01.01.650	Fugitive Emissions;
IDAPA 16.01.01.725	Rules for Sulfur Content of Fuels;
IDAPA 16.01.01.805	Rules for the Control of Hot-Mix Asphalt Plants; and
40 CFR 60 Subpart I	Standards of Performance for Hot-Mix Asphalt Plants.

6. AIRS Information

The AIRS database will be updated to include this new permit. AIRS forms are located as Appendix C of this memo.

FEES

This facility is not a major facility as defined in IDAPA 16.01.01.008.14, therefore, registration and registration fees in accordance with IDAPA 16.01.01.526 are not applicable upon issuance of the final permit. Fees for operations during from the beginning of 1997 until the date of permit issuance shall apply to the facility in accordance with IDAPA 16.01.01.526.

The Permittee is subject to a $500.00 permit application fee upon issuance of the final permit, as required by IDAPA 16.01.01.470 (Rules).

RECOMMENDATION

Based on the review of the OP application and all applicable state and federal rules

and regulations concerning the permitting of air pollution sources, the Bureau recommends that Rock Contractors, Inc., be issued a Tier II OP for this portable hot-mix asphalt facility. An opportunity for public comment shall be provided as required by IDAPA 16.01.01.404.01 (Rules). Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees for the Tier II OP.

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cc: P. Rayne/AFS
S. West, Boise Regional Office
Source File
COF

APPENDIX A

Rock Contractors, Incorporated

Emissions and Impact
Calculation Spreadsheet

INPUT SECTION - enter info in highlighted areas only

Company:	ROCK CONTRACTORS INC.
Permit Engr:	Darrin Meier
Date:	March 10, 1997
Filename:	rockfill.wk4
HMA Plant Type:	B (A = Batch Mix Hot Mix Asphalt Plant; B = Drum Mix Hot Mix Asphalt Plant)
Dryer Fuel Type:	A (A = Natural Gas-Fired Dryer; B = Distillate Fuel Oil-Fired Dryer; C = Residual Fuel Oil-Fired Dryer; D = Waste Oil-Fired Dryer)
Dryer Stack Flow Rate:	14,643 [=] actual cubic feet per minute (acfm)
Dryer Stack Temperature:	112 [=] temperature (oF)
Dryer Stack Moisture Content:	15.2 [=] moisture wt % (Default 18 wt%)
Dryer Stack Pressure:	29.92 [=] stack pressure (Default 29.92 "Hg)
Corrected Flow Rate (calculated):	15,391 [=] dry standard cubic feet per minute (dscfm)
Facility Production Capacity:	300 [=] Ton/hr
Modeled 1-hr Concentration:	11.03 [=] µg/m3, at a unity emission rate of 1 lb/hr
Is a PM performance test required for this HMA plant?	N (Y or N)
Generator? (Y/N)	N (Y or N)
	600
	A
	65
	1020

SPREADSHEET DATA - information used by spreadsheet

Background Concentrations

	1-hr	3-hr	8-hr	24-hr	Annual
PM-10				86	32.7
CO	11400		5130		
NOx					40
SOx		843		144	23.5

Fugitive Emission Data

Mean Wind Speed (U)	10	[=] mph
Material Moisture Content (M)	3.5	[=] %
Particle Size Multiplier (k)		
PM-10 (<10 µm)	0.35	[=] dimensionless
Emission Factor:		
PM-10 (<10 µm)	0.0020	[=] lb/T
PM:	0.0053	[=] lb/T

Notes: 1 EF = k*0.0032*(U/5)^1.3/(M/2)^1.4
Drop-Point Equation, Rating "A," AP-42, 5th Ed. p.13.2.4-3.
Assumptions: Wind Speed = 10 mph; Moisture = 3.5%; and Aggregate = 94% of product.

FACILITY CLASSIFICATION INPUT

Facility Annual Emission Limit: 100 [=]T/yr
Note: Use 100 T/yr for Title V Limitation
Use 250 T/yr for PSD Limitation
For the standard HMA permit, use 100 T/yr.

DRYER EMISSION RATE CALCULATIONS

	DRYER STACK		
Pollutant	Emission Factor [=] lb/ton	Emission Rate (Uncontrolled) [=] lb/hr	Emission Rate (Controlled) [=] lb/hr
Total PM	19.00	3,800.00	5.28
	[=] gr/dscf		
Total PM-10	0.04	860.00	5.28
	[=] lb/ton		
CO	0.04	7.20	7.20
NOx	0.08	15.00	15.00
SO2	0.06	11.20	11.20

HMA emission factors for CO, NOx, SO2 and uncontrolled PM & PM-10 are from AP-42 Section 11.1. Controlled PM & PM-10 is from the NSPS 0.04 gr/dscf.

GENERATOR EMISSION RATE CALCULATIONS

	GENERATOR STACK		
Pollutant	Emission Factor [=] lb/hr	Emission Rate (Uncontrolled) [=] lb/hr	Emission Rate (Controlled) [=] lb/hr
Total PM	N/A	0.00	0.00
Total PM-10	N/A	0.00	0.00
CO	N/A	0.00	0.00
NOx	N/A	0.00	0.00
SO2	N/A	0.00	0.00

Generator emission factors are from AP-42 [illegible] Sup 3.4.

PERMIT REQUIREMENTS SECTION - enforceable permit limits

Facility Classification: A2

Permit Emission Rate Limits	Allowable Emission Limits	
HMA Dryer Stack:	NA lb/hr	
Generator Stack:	NA lb/hr	
Permit Limits for Attainment Area Operations		
Generator Hours of Operation Limits:	NA hrs/day	NA hrs/yr
HMA Plant Throughput Limits:	NA T/day	1,752,000 T/yr
Permit Limits for Non-Attainment Area Operations		
Generator Hours of Operation Limits:	NA hrs/day	NA hrs/yr
HMA Plant Throughput Limits:	961 T/day	350,819 T/yr

Hot-Mix Asphalt Plant Emissions and Ambient Impact Calculations

MODELING ANALYSIS CALCULATIONS FOR ATTAINMENT AREAS

	Allowable Impacts						Permitted Impacts			
	NAAQS			< 100 TPY			NAAQS			< 100 TPY
Pollutant	Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Other a,b,c	Hours of Operation [=] hr/year	Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Calculated 24-hr Impact [=] ug/m3	Calculated Annual Impact [=] ug/m3	Other a,b,c	Calculated Emissions [=] ton/year
PM	N/S	N/S			24.0	8,760				
PM-10	24.0	8,760		8,760	Based on:	Based on:	24.97	4.99		28.10
CO	N/S	N/S		8,760	None	None	34.07	6.81		31.54
CO a			1.0				---	---	85.18	
CO b			8.0		No emission limitations.		---	---	59.62	
NO_x	N/S	8,760		8,760			---	14.20		65.70
SO_2	24.0	8,760		8,760			57.08	10.60		49.06
SO_2 c			3.0				---	---	119.25	

MODELING ANALYSIS CALCULATIONS FOR NON-ATTAINMENT AREAS

	Allowable Impacts						Permitted Impacts			
	NAAQS			< 100 TPY			NAAQS			< 100 TPY
Pollutant	Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Other a,b,c	Hours of Operation [=] hr/year	Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Calculated 24-hr Impact [=] ug/m3	Calculated Annual Impact [=] ug/m3	Other a,b,c	Calculated Emissions [=] ton/year
PM	N/S	N/S			4.8	1,754				
PM-10	4.8	1,754		8,760	Based on:	Based on:	5.00	1.00		5.63
CO	N/S	N/S		8,760	PM-10	PM-10	6.02	1.36		6.31
CO a			1.0				---	---	85.18	
CO b			8.0		Limited by NAAQS.		---	---	35.82	
NO_x	N/S	8,760		8,760			---	2.84		13.16
SO_2	24.0	8,760		8,760			11.43	2.12		9.82
SO_2 c			3.0				---	---	119.25	

FUGITIVE EMISSION CALCULATIONS FOR ATTAINMENT AREAS

	PM	PM-10
Pre-Dryer Source Emissions ([=] lb/hr)		
Loader -> Cold Aggregate Bin	1.003	0.379
Cold Aggregate Bin -> Conveyor	1.003	0.379
Conveyor -> Drum Dryer	1.003	0.379
Total Pre-Dryer Source Emissions	3.008	1.138
Post-Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bins	NA	NA
Hot Bins -> Weigh Hopper	NA	NA
Weigh Hopper -> Pug Mill	NA	NA
Total Post-Dryer Source Emissions	NA	NA
Scavenger Control Efficiency	NA	NA
Total Uncontrolled Emissions ([=] lb/hr)	3.01	1.14
Total Uncontrolled Emissions ([=] T/yr)	13.17	4.98
Total Controlled Emissions ([=] lb/hr)	3.01	1.14
Total Controlled Emissions ([=] T/yr)	13.17	4.98

FUGITIVE EMISSION CALCULATIONS FOR NON-ATTAINMENT AREAS

	PM	PM-10
Pre-Dryer Source Emissions ([=] lb/hr)		
Loader -> Cold Aggregate Bin	1.003	0.379
Cold Aggregate Bin -> Conveyor	1.003	0.379
Conveyor -> Drum Dryer	1.003	0.379
Total Pre-Dryer Source Emissions	3.008	1.138
Post-Dryer Source Emissions		
Screening Process	NA	NA
Screen -> Hot Bins	NA	NA
Hot Bins -> Weigh Hopper	NA	NA
Weigh Hopper -> Pug Mill	NA	NA
Total Post-Dryer Source Emissions	NA	NA
Scavenger Control Efficiency	NA	NA
Total Uncontrolled Emissions ([=] lb/hr)	3.01	1.14
Total Uncontrolled Emissions ([=] T/yr)	2.64	1.00
Total Controlled Emissions ([=] lb/hr)	3.01	1.14
Total Controlled Emissions ([=] T/yr)	2.64	1.00

Source: National Asphalt Pavement Association
a CO 1-hr Averaging Period
b CO 8-hr Averaging Period
c SO2 3-hr Averaging Period

SPREADSHEET SUMMARY - results of emission and modeling calcs for all pollutants

ATTAINMENT AREAS			NON-ATTAINMENT AREAS	
Uncontrolled	Controlled	Dryer	Uncontrolled	Controlled
16644.00 T/yr	23.11 T/yr	PM	3332.78 T/yr	4.63 T/yr
3766.80 T/yr	23.11 T/yr	PM-10	754.26 T/yr	4.63 T/yr
31.54 T/yr	31.54 T/yr	CO	6.31 T/yr	6.31 T/yr
65.70 T/yr	65.70 T/yr	NOx	13.16 T/yr	13.16 T/yr
49.06 T/yr	49.06 T/yr	SO_2	9.82 T/yr	9.82 T/yr
		Generator		
0.00 T/yr	0.00 T/yr	PM	0.00 T/yr	0.00 T/yr
0.00 T/yr	0.00 T/yr	PM-10	0.00 T/yr	0.00 T/yr
0.00 T/yr	0.00 T/yr	CO	0.00 T/yr	0.00 T/yr
0.00 T/yr	0.00 T/yr	NOx	0.00 T/yr	0.00 T/yr
0.00 T/yr	0.00 T/yr	SO_2	0.00 T/yr	0.00 T/yr
		Fugitives		
13.17 T/yr	13.17 T/yr	PM	2.64 T/yr	2.64 T/yr
4.98 T/yr	4.98 T/yr	PM-10	1.00 T/yr	1.00 T/yr
		Total :		
16657.17 T/yr	36.29 T/yr	PM	3335.42 T/yr	7.27 T/yr
3771.78 T/yr	28.10 T/yr	PM-10	755.26 T/yr	5.63 T/yr
31.54 T/yr	31.54 T/yr	CO	6.31 T/yr	6.31 T/yr
65.70 T/yr	65.70 T/yr	NOx	13.16 T/yr	13.16 T/yr
49.06 T/yr	49.06 T/yr	SO_2	9.82 T/yr	9.82 T/yr
3771.8 [=] T/yr of PM-10	65.7 [=] T/yr of NO_x	Title V PTE Summary :	755.3 [=] T/yr of PM-10	13.2 [=] T/yr of NO_x
16,657 [=] T/yr of PM	65.7 [=] T/yr of NO_x	Facility PTE Summary	3,335 [=] T/yr of PM	13.2 [=] T/yr of NO_x
Enforceable Limits -- Attainment Areas			Enforceable Limits -- Non-Attainment Areas	
24.0 hr/day	8,760 hr/yr		4.8 hr/day	1,754 hr/yr
Dryer Controlled Emission Rates		Emission Limits	Dryer Controlled Emission Rates	
5.28 lb/hr	23.11 T/yr	PM/PM-10	5.28 lb/hr	4.63 T/yr
7.20 lb/hr	31.54 T/yr	CO	7.20 lb/hr	6.31 T/yr
15.00 lb/hr	65.70 T/yr	NOx	15.00 lb/hr	13.16 T/yr
11.20 lb/hr	49.06 T/yr	SO_2	11.20 lb/hr	9.82 T/yr
Generator Controlled Emission Rates		Emission Limits	Generator Controlled Emission Rates	
0.00 lb/hr	0.00 T/yr	PM-10	0.00 lb/hr	0.00 T/yr
0.00 lb/hr	0.00 T/yr	CO	0.00 lb/hr	0.00 T/yr
0.00 lb/hr	0.00 T/yr	NOx	0.00 lb/hr	0.00 T/yr
0.00 lb/hr	0.00 T/yr	SO_2	0.00 lb/hr	0.00 T/yr

1 Total is the dryer, generator and fugitives added together for total PTE.
2 Title V PTE summary does not account for PM, only PM-10.

APPENDIX B

Rock Contractors, Incorporated

SCREEN Modeling output Files

03/07/97
08:41:28

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

ROCK CONTRACTORS HOT MIX ASPHALT PLANT STACK AT 1 LB/HR

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126000
STACK HEIGHT (M)	=	8.2300
STK INSIDE DIAM (M)	=	.9250
STK EXIT VELOCITY (M/S)	=	14.4968
STK GAS EXIT TEMP (K)	=	322.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 20642.000 (ACFM)

ASSUMPTIONS:
① STACK FLOW RATE SCALED TO 200T/HR PRODUCTION
② 1986 NSPS SOURCETEST IS T: BASIS OF ALL PARAMETERS FOR FLOW RATE
③ STACK DATA PROVIDED BY SPIDELL & ASSOCIATES. TO GARY GATES (NOT IN APPLICATN
④ FLOW RATE CONVERTED FROM DSCFM TO ACFM

BUOY. FLUX = 2.739 M**4/S**3; MOM. FLUX = 40.905 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.2540E-09	6	1.0	1.0	10000.0	42.74	5.60	5.59	NO
100.	10.69	2	5.0	5.0	1600.0	17.35	19.44	10.92	NO
200.	11.53	3	4.0	4.0	1280.0	19.63	23.84	14.40	NO
300.	10.65	4	5.0	5.0	1600.0	17.35	22.76	12.37	NO
400.	9.835	4	3.5	3.5	1120.0	21.26	29.69	15.72	NO
500.	8.984	4	3.0	3.0	960.0	23.43	36.41	18.81	NO
600.	8.187	4	2.5	2.5	800.0	26.47	43.03	21.84	NO
700.	7.465	4	2.0	2.0	640.0	31.04	49.62	24.90	NO
800.	6.898	4	2.0	2.0	640.0	31.04	55.95	27.56	NO
900.	6.315	4	1.5	1.5	480.0	38.64	62.49	30.72	NO
1000.	5.961	4	1.5	1.5	480.0	38.64	68.68	33.25	NO
1100.	5.559	4	1.5	1.5	480.0	38.64	74.82	35.21	NO
1200.	5.179	4	1.5	1.5	480.0	38.64	80.91	37.12	NO
1300.	4.827	4	1.5	1.5	480.0	38.64	86.95	38.98	NO
1400.	4.583	5	1.0	1.0	10000.0	49.81	70.23	29.26	NO
1500.	4.604	5	1.0	1.0	10000.0	49.81	74.65	30.35	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:									
167.	11.83	3	5.0	5.0	1600.0	17.35	20.28	12.24	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	11.83	167.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

ROCK CONTRACTORS HOT MIX ASPHALT PLANT STACK.

$$\dot{Q}_{STD} = \dot{Q}_{ACTUAL\ TEST}\left(\frac{T_{STD}}{T_m}\right)\left(\frac{P_{BAR}}{P_{STD}}\right)$$

$$\therefore \dot{Q}_{ACTUAL} = \dot{Q}_{STD}\left(\frac{T_m}{T_{STD}}\right)\left(\frac{P_{STD}}{P_{BAR}}\right)$$

BAR = BAROMETRIC
STD = STANDARD
Q = VOLUMETRIC FLOW RATE.
T_m = MEASURED TEMP.

REINTRODUCING WATER VAPOR COMPONENT (FROM DRY STANDARD FLOW).

$$\dot{Q}_{ACTUAL} = \dot{Q}_{STD}\left(\frac{T_m}{T_{STD}}\right)\left(\frac{P_{STD}}{P_{BAR}}\right)\left(\frac{1}{1-\frac{\%H_2O}{100}}\right)$$

1986 STACK TEST: 71,332 $\frac{DRY\ STD}{min}$

$$\dot{Q}_{ACTUAL} = (71{,}332\ dcfm)\left(\frac{119°F+460}{60°F+460}\right)\left(\frac{14.7\ psi}{13.\ psi}\right)\left(\frac{1}{1-\frac{15.2}{100}}\right)$$

$\dot{Q}_{ACTUAL}$ = 16,307 cfm @ 158 TON/HR PRODUCTION.

SCALED TO 200 T/hr: (ASSUME LINEAR RELATIONSHIP)

$$\dot{Q}_{MODEL} = \left(\frac{200}{158}\right)\left(16{,}307\ \frac{ft^3}{min}\right)$$

$\dot{Q}$ = 20,642 ACFM

$\dot{Q} \simeq$ 20,600 ACFM

TEMPERATURE AT EXIT: 119°F + 460 = 579°R.

$$TEMP = \frac{579}{1.8} = 322\ KELVIN$$

$\dot{Q}_{ACTUAL}$ (NEGLECTING PRESSURE TO MATCH SPREADSHEET) = 14,880 ACFM AT 158 T/HR PROD

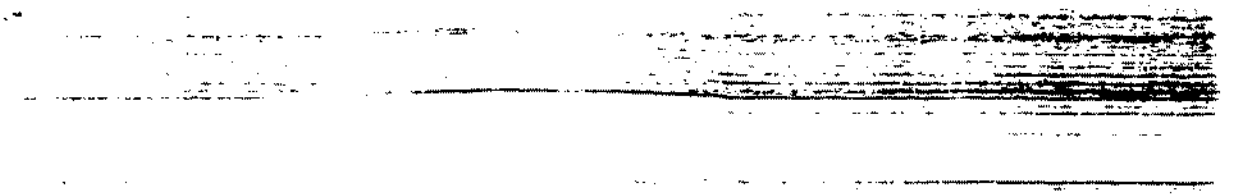
= 18,830 ACFM AT 200 T/HR.

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS
AMPAD

APPENDIX C

Rock Contractors, Incorporated

AIRS



ABBREVIATED AIRS DATA ENTRY SHEET

Name of Facility: ROCK CONTRACTORS INC - 200T/HR HOT-MIX ASPHALT PLA

AIRS/Permit #: 997-00122

PTO Issued Date:

*Source/Emissions Unit Name (25 spcs) (Please use name as indicated in permit)	SCC # (8 digit #)	Air Program (SIP/NESHAP/ NSPS/PSD)
* ASPHALT : DRUM DRYER	30500205	NSPS
ASPHALT HEATER (BURNER) : DIESEL	30500208	NSPS
HAUL ROADS	30500290	SIP

RETURN TO PAT RAINE
AIRS-PT.LST (9/95)

March 28, 1997

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Air & Hazardous Waste Division

FROM: Martin Bauer, Chief
Air Quality Permitting Bureau

SUBJECT: Issuance of Proposed Tier II Operating Permit #777-00122 to Rock Contractors, Incorporated, Portable Hot-Mix Asphalt Plant

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) (Rules) for issuing Operating Permits.

PROJECT DESCRIPTION

Rock Contractors, Incorporated, operates a portable hot-mix asphalt facility. Rock Contractors, Inc., is requesting a Tier II operating permit be issued to cover the operations of the hot-mix asphalt facility in both attainment and non-attainment areas throughout the state of Idaho. The facility has a maximum rated capacity of 200 tons per hour (T/hr). The Permittee requested that the standard permitting methodology be applied to the application.

SUMMARY OF EVENTS

On September 15, 1995, DEQ received a Permit to Construct application for a portable rock crushing facility from Rock Contractors, Inc. The application was determined administratively complete on December 21, 1995. The final required information was received on March 3, 1997.

FEES

The facility is not major as defined in IDAPA 16.01.01.008.14. Therefore, registration and registration fees in accordance with IDAPA 16.01.01.526 are not applicable upon permit issuance.

The facility is subject to Tier II permit application fees as required by IDAPA 16.01.01.470, for the amount of $500.00. The fee will be requested upon permit issuance.

RECOMMENDATION

Based on the review of the OP application and all applicable state and federal rules and regulations concerning the permitting of air pollution sources, the Bureau recommends that Rock Contractors, Inc., be issued a Tier II OP for this portable hot-mix asphalt facility. An opportunity for public comment shall be provided as required by IDAPA 16.01.01.404.01 (Rules). Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees for the Tier II OP.

ODG\MB\DAM:jrj...\permit\rockcon\rockconh.2MM

cc: Pat Rayne, AFS
S. West, Boise Regional Office
OP File Manual
Source File
COF

MEMORANDUM

TO: Dave Sande, Accountant Supervisor
Support Services

FROM: Martin Bauer, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

THROUGH: Darrin Mehr, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section
Susan J. Richards, Air Quality Permits Manager
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Permit Application Fees for Tier II Operating Permit

The following facility has been reviewed for compliance with IDAPA 16.01.01.470 "Permit Application Fees for Tier II Permits":

Rock Contractors, Inc.

Portable Hot-Mix Asphalt Facility

Tier II OP #777-00122

Rock Contractors, Inc. applied for a Tier II Operating Permit for a portable hot-mix asphalt facility. DEQ has issued the facility's Tier II Operating Permit. According to IDAPA 16.01.01.470, the facility is subject to permit application fees for Tier II Operating Permits of:

Five Hundred Dollars and No Cents ($500.00)

The contact and mailing address for the above facility is:

PERSON CONTACT:	Dennis Wells, Secretary
COMPANY ADDRESS:	Rock Contractors, Inc. 2190 S. Cole Rd. Boise, Idaho 83709

DS\MB\SJR\DAM:jrj...\rockcon\rockh-p.FEE

cc: S.West, Boise Regional Office
Source File
COF